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Different aspects of undescended testis

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2008

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citation for published version (APA)

Sijstermans, K. (2008). *Different aspects of undescended testis*. [PhD-Thesis – Research external, graduation internal, Vrije Universiteit Amsterdam].

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CHAPTER 6: ELECTRONIC LETTERS & CORRESPONDENCE

SYNOPSIS: In this chapter (electronic) letters and responses with respect to the subject of undescended testis are included.

6.1 ELECTRONIC LETTER

Rapid Responses to :

Prem AR. Common paediatric problems. BMJ 2006; 333(7566): 486-489

K. Sijstermans, W.W.M. Hack, L.M. van der Voort-Doedens

11 september 2006 www.bmj.com

From: Prem AR. Common paediatric problems. BMJ 2006;333:486-489

COMMON PAEDIATRIC PROBLEMS

A R Prem, acting chief Department of Urology, The Armed Forces Hospital, Al-Khod, Sultanate of Oman.

Undescended testis

The incidence of undescended testis ranges from 3.4% to 5.8% in full term boys but decreases to 0.8% in boys aged about one year. Why testes fail to descend into the scrotum is unclear, but recent evidence suggests that descent occurs in two distinct phases and that androgens may have an important role, possibly acting via the genitofemoral nerve. An undescended testis can be classified by its location in the upper scrotum, superficial inguinal pouch, inguinal canal, or abdomen. In 80% of cases, the undescended testis will be palpable in the inguinal canal. Patients with undescended testes have two major concerns: increased incidence of testicular cancer and heightened risk of subfertility.

For treatment purposes, the main distinction that needs to be made is whether the testis is palpable. If the testis is palpable in the inguinal canal, an orchidopexy should be carried out. The correct timing of orchidopexy has been debated. Spontaneous descent of undescended testis is rare after the age of one year.

Fertility of an undescended testis becomes compromised after the age of two years

Every attempt should be made to locate an impalpable testis. Ultrasound, computed tomography, and magnetic resonance imaging have been used, but laparoscopy is the current investigation of choice. If blind ending spermatic vessels are noted, further evaluation is not needed; the patient and parents should be counselled and hormonal replacement and a testicular prosthesis may be needed. If the testis is intra-abdominal in a prepubertal child, orchidopexy should be performed as soon as possible. If an intra-abdominal testis is detected after puberty, orchidectomy should be performed, as the testis is incapable of spermatogenesis and the risk of malignancy is up to 10 times higher than in a normal testis. If the cord structures enter the internal ring, inguinal exploration is warranted. In boys with bilateral undescended testis in whom neither testis is palpable, chromosomal and endocrine evaluation is needed.

Retractile testis

Retractile testis is common in general practice and is often confused with undescended testis. The key to distinguishing a retractile testis from an undescended testis is to show that the testis can be delivered into the scrotum. A retractile testis will stay in the scrotum after the cremaster muscle has been overstretched, whereas a low undescended testis will immediately pop back to its undescended position after being released. If any doubt exists, the child should be seen in follow-up for a repeat examination. If doubt exists as to whether the testis is retractile or undescended, referral for a urological opinion should be arranged.

LETTER ABC of Urology Common paediatric problems

Undescended testis

Sir, - Undescended testis (UDT) represents the most common genitourinary disorder in childhood. Important long term sequelae may include impaired spermatogenesis and

testicular tumour. Until recently, UDT was mainly classified according to whether or not the testis is palpable. However, nowadays, UDT is categorised into congenital and acquired forms (1-4). A congenital UDT is an UDT which has never been descended from birth. In contrast, an acquired UDT has previously been fully descended but becomes undescended at a later age. A number of mechanisms for the development of ascent have been suggested. A persisting processus vaginalis might allow the testis to ascend to become trapped in a higher position,(2,3) thereby preventing normal elongation of the spermatic cord (5). Also, cremasteric muscle spasticity might play a role (6).

To allow recognition of congenital, and acquired UDT we propose, that in the clinical setting, the importance of the previous testicular position in UDT should be more outlined. Congenital UDT should be treated surgically, preferable at or near 1 year of age,(7) to avoid secondary degeneration. Although the abnormal testicular histology is the main reason to perform orchidopexy (ORP), there are no exact data documenting improvement of the histology after ORP. Therapy for acquired UDT remains controversial. Surgical correction is usually intuitively recommended although there are no long-term data documenting improved fertility at adolescence. In a recent study we described that three out of four acquired UDT will descend spontaneously in the peripubertal period. Therefore, ORP might be postponed until the boy has reached at least puberty stage G3 (testicular volume 10-15 ml) (8). Studies are still conducted to evaluate testicular growth after spontaneous descent and it seems realistic that testicular volume in adulthood is normal. Whether this means normal fertility in adulthood remains to be seen. In addition, the risk of testicular cancer in acquired UDT remains unknown.

We conclude that, at present, UDT should be classified into congenital and acquired forms. Acquired UDT has a high tendency of spontaneous descent in early and mid puberty. ORP might therefore be postponed until at least mid puberty. There is a need for further data on the natural course of acquired UDT and on testicular growth after midpubertal ORP.

REFERENCES

1. Fenton EJM, Woodward AA, Hudson IL, Marschner I. The ascending testis. *Pediatr Surg Int* 1990;5:6-9.
2. Atwell JD. Ascent of the testis: fact or fiction. *Br J Urol* 1985;57:474-477.
3. Clarnette TD, Rowe D, Hasthorpe S, Hutson JM. Incomplete disappearance of the processus vaginalis as a cause of ascending testis. *J Urol* 1997;157:1889-1891.
4. Hack WW, Meijer RW, Bos SD, Haasnoot K. A new clinical classification for undescended testis. *Scand J Urol Nephrol* 2003;37:43-47.
5. Mayr J, Rune GM, Holas A, Schimpl G, Schmidt B, Haberlik A. Ascent of the testis in children. *Eur J Pediatr* 1995;154:893-895.
6. Smith JA, Hutson JM, Beasley SW, Reddihough DS. The relationship between cerebral palsy and cryptorchidism. *J Pediatr Surg* 1989;24:303-305.
7. American Academy of Pediatrics. Timing of elective surgery on the genitalia of male children with particular reference to the risks, benefits, and psychological effects of surgery and anesthesia. *Pediatrics* 1996;97:590-594.
8. Sijstermans K, Hack WWM, van der Voort-Doedens LM, Meijer RW, Haasnoot K. Puberty stage and spontaneous descent of acquired undescended testis: implications for therapy? *Int J Androl* 2006;29:915-918.

6.2 ELECTRONIC LETTER

Response to :

Jamie D.C. Martin. This is the first study. Arch Dis Child online 17 January 2007

(eLetter for Hack et al. Prevalence of acquired undescended testis in 6-year, 9-year, and 13-year old Dutch school-boys. Arch Dis Child 2007;92(1):17-20)

W.W.M. Hack, K. Sijstermans, J.M. van Dijk, L.M. van der Voort-Doedens, M.E. de Kok, M.J. Hobbelt-Stoker

24 January 2007 www.adc.bmj.com

From : D.C. Martin. This is the first study. Arch Dis Child online 17 January 2007
(eLetter for Hack et al. Prevalence of acquired undescended testis in 6-year, 9-year, and 13-year old Dutch schoolboys. Arch Dis Child 2007;92(1):17-20)

Jamie D.C. Martin, Community Paediatrician, Child Health Department, Herefordshire, U.K.

Dear Dr Hack and colleagues,

I read your paper with great interest as it confirms my own findings, which were published on line in July, 2006, and in print in the October issue of the Journal of Pediatric Urology, 2006.

I and my editor, David Frank, are aware that you probably did not know about my article, but when I e-mailed him that your "What this study adds" comments are not strictly true he thought I should inform the Editor of the Archives.

My paper will, I trust, be forwarded to you by Professor Bauchner. I should like you to read it for your opinion, as recent guidelines in this country will clearly not pick up the acquired UDTs, as they have done in the past, albeit not realising the natural history, which has been made clear by your work.

David Frank suggested that a letter might be printed in the Archives in recognition of my Herefordshire study.

I hope this is not too much trouble.

Yours sincerely
Jamie Martin.

Dear Editor,

The important and excellent study by Martin (1) showed that many orchidopexies (ORPs) for undescended testis (UDT) are performed later in childhood on previously fully descended testes. Other studies have shown similar results (2,3). These late ORPs can mainly be attributed to surgery on acquired UDT, although late referral, surgery on retractile testes and misdiagnosis cannot be ruled out in individual cases. The results of these studies prompted us to initiate a prospective study in unselected groups of boys to investigate the frequency of acquired UDT. Already, in selected groups of boys there were indications that acquired UDT might outnumber congenital UDT by a factor two to three. The results of our study showed that acquired UDT is seen in 1,2% of 6-year olds, in 2,2% of 9-year olds and in 1,1% of 13-year olds. These figures closely correspond with the 1-2% late ORP-rate. Therefore, acquired UDT seems to be a plausible cause of the high late ORP-rate. Furthermore, as suggested by Martin (1), we also recommended that Youth Health Care Institutions should become familiar with the phenomenon of acquired UDT and testis position should be routinely determined in elderly boys as well. Whether prepubertal surgery is needed in the treatment of acquired UDT is now heavily under debate since 3 out of 4 acquired UDT will descend spontaneously at (early) puberty (4).

REFERENCES

1. Martin JDC. Further evidence for acquired undescended testicle in the UK and its incompatibility with current recommendations in the Hall Report. *J Ped Urol* 2006;2(5):392-397.
2. Thayyil S, Shenoy M, Agrawal K. Delayed orchidopexy: failure of screening or ascending testis. *Arch Dis Child* 2004;89:890-891.
3. Hack WWM, van der Voort-Doedens LM, de Kok ME, Meijer RW, Bos SD, Hobbelt-Stoker JM. Previous testicular position in boys who underwent orchidopexy due to undescended testis at the Alkmaar Medical Centre, the Netherlands (1986-1999). *Ned Tijdschr Geneesk* 2002;146:563-566.
4. Sijstermans K, Hack WWM van der Voort-Doedens LM, Meijer RW, Haasnoot, K. Puberty stage and spontaneous descent of acquired undescended testis: implications for therapy? *Int J Androl* 2006;29:597-602.

6.3 CORRESPONDENCE

Correction of cryptorchidism and testicular cancer

W.W.M. Hack, K. Sijstermans, L.M. van der Voort-Doedens

New England Journal of Medicine 2007; 357(8): 825-827

From: Pettersson A, Richiardi L, Nordenskjöld A, Kaijser M, Akre O. Age at surgery for undescended testis and risk of testicular cancer. *N Engl J Med* 2007;356(18):1835-1841

Clinical Epidemiology Unit, Department of Medicine, Karolinska Institutet, Stockholm, Sweden.

ABSTRACT

Background: Undescended testis, which is a risk factor for testicular cancer, is usually treated surgically, but whether the age at treatment has any effect on the risk is unclear. We studied the relation between the age at treatment for undescended testis and the risk of testicular cancer. **Methods:** We identified men who underwent orchiopexy for undescended testis in Sweden between 1964 and 1999. Cohort subjects were identified in the Swedish Hospital Discharge Register and followed for the occurrence of testicular cancer through the Swedish Cancer Registry. Vital statistics and data on migration status were taken from the Register of Population and Population Changes for the years 1965 through 2000. We estimated the relative risk of testicular cancer using Poisson regression of standardized incidence ratios, comparing the risk in the cohort with that in the general population. We also analyzed the data by means of Cox regression, using internal comparison groups. **Results:** The cohort consisted of 16,983 men who were surgically treated for undescended testis and followed for a total of 209,984 person-years. We identified 56 cases of testicular cancer during follow-up. The relative risk of testicular cancer among those who underwent orchiopexy before reaching 13 years of age was 2.23 (95% confidence interval [CI], 1.58 to 3.06), as compared with the Swedish general population; for those treated at 13 years of age or older, the relative risk was 5.40 (95% CI, 3.20 to 8.53). The effect of age at orchiopexy on the risk of testicular cancer was similar in comparisons within the cohort. **Conclusions:** Treatment for undescended testis before puberty decreases the risk of testicular cancer. Copyright 2007 Massachusetts Medical Society.

TO THE EDITOR:

Pettersson et al. (May 3, issue) did not make a distinction between congenital and acquired undescended testis (UDT). Congenital UDT occurs in 1,1% of boys at 1 year of age (1), whereas the overall prevalence of acquired UDT is 1,5% (2). Congenital UDT should be treated surgically between 6 and 12 months of age (3), whereas the treatment of acquired UDT is still controversial. Surgical treatment of acquired UDT accounts for the high rate of late orchidopexies (4). In three of four cases of acquired UDT, the testes will descend spontaneously at puberty, and in a recent study, we found that spontaneous descent occurred at 13 years of age or older in 109 of 139 boys with acquired UDT (5). Congenital and acquired UDT are different conditions that probably also are associated with different risks of testicular cancer. Therefore, the conclusions of this study are difficult to interpret for the individual patient.

REFERENCES

1. Berkowitz GS, Lapinski RH, Dolgin SE, Gazella JG, Bodian CA, Holzman IR. Prevalence and natural history of cryptorchidism. *Pediatrics* 1993;92:44-49.
2. Hack WW, Sijstermans K, van Dijk J, van der Voort-Doedens LM, de Kok ME, Hobbelt-Stoker MJ. Prevalence of acquired undescended testis in 6-year, 9-year and 13-year-old Dutch schoolboys. *Arch Dis Child* 2007;92:17-20.
3. Ritzén EM, Bergh A, Bjerknes R, Christiansen P, Cortes D, Haugen SE, et al. Nordic consensus on treatment of undescended testes. *Acta Paediatr* 2007;96:638-643.
4. Hack WW, Voort-Doedens LM, Sijstermans K, Meijer RW, Pierik FH. Reduction in the number of orchidopexies for cryptorchidism after recognition of acquired undescended testis and implementation of expectative policy. *Acta Paediatr* 2007;96:915-918.
5. Sijstermans K, Hack WW, van der Voort-Doedens LM, Meijer RW, Haasnoot K. Puberty stage and spontaneous descent of acquired undescended testis: implications for therapy? *Int J Androl* 2006;29:597-602.